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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,277	11/19/2001	Masafumi Okazaki	Q66911	8364

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,277

Applicant(s)

OKAZAKI ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 14 June 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on June 14, 2002 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coles et al. (U. S. Pat. 5,994,807) in view of Batten et al. (U. S. Pat. 5,770,902).

Coles et al. disclose a motor (20) for use with a motorized power steering apparatus (abstract) in which the motor is fixedly secured to a housing (25) having a gear accommodated therein for transmitting a torque of the motor (20) to a steering wheel, the motor (20) comprising:

- a frame (25) of a bottomed cylindrical shape having an opening formed therein;
- a bracket fixed to the opening in the frame (25);

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a rotating element (27) extending through the bracket and having a shaft (40) rotatably supported by a frame side bearing (80) fixedly mounted on the frame (25) and a bracket side bearing (43) fixedly mounted on the bracket;

a stationary element (26) fixedly attached to the frame (25) at a location around an outer periphery of the rotating element (27) and having a stator winding wound therearound;

an electronic component (figures 2 and 3) provided on the bracket at one side of the bracket side bearing (43) near the housing (25); and

a plurality of wires (figure 2) connected with the electronic component.

However, Coles et al. do not clearly disclose that the electronic component is a rotation sensor for detecting a rotational angle of the rotating element. Coles et al. do not disclose that the plurality of wires are connected with a rotation sensor for supplying and receiving signals to and from the rotation sensor. Coles et al. do not disclose that the rotation sensor comprises a stator fixedly secured to the bracket and a rotor fixedly secured to the shaft.

Coles et al. do not disclose that a change in the magnetic field of the stator caused in accordance with rotation of the rotor is detected for sensing the rotational angle of the rotating element. Coles et al. do not disclose a wire connection board provided at one side of the stationary element near the bracket side bearing. Coles et al. do not disclose that the wire connection board is connected with the stator winding and have annular stator side respective phase terminals arranged concentrically around

the shaft of the rotating element in a radially spaced apart relation with respect to one another.

Batten et al. disclose a rotation sensor (26) provided on the bracket (28) at one side of the bracket side bearing (33) near the housing (76) for detecting a rotational angle of the rotating element (16). Batten et al. disclose a plurality of sensor signal wires (27) connected with the rotation sensor (26) for supplying and receiving signals to and from the rotation sensor (26). Batten et al. disclose that the rotation sensor (26) comprises a stator (25) fixedly secured to the bracket (28) and a rotor (16) fixedly secured to the shaft (20).

Batten et al. disclose that a change in the magnetic field of the stator (25) caused in accordance with rotation of the rotor (16) is detected for sensing the rotational angle of the rotating element (16). Batten et al. disclose a wire connection board (34) provided at one side of the stationary element (12) near the bracket side bearing (33). Batten et al. disclose that the wire connection board (34) is connected with the stator winding (14) and have annular stator side respective phase terminals (58) arranged concentrically around the shaft (20) of the rotating element (16) in a radially spaced apart relation with respect to one another. Batten et al. disclose that the rotation sensor (26) is disposed so as to be covered by the housing (76). The invention of Batten et al. has the purpose of facilitating the interconnection of control components and power components in a brushless DC motor and detecting a rotational angle of the rotating element.

It would have been obvious at the time the invention was made to modify the motor of Coles et al. and provide it with the rotation sensor, sensor wires, and wire

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connection board configuration disclosed by Batten et al. for the purpose of facilitating the interconnection of control components and power components in the brushless DC motor and detecting a rotational angle of the rotating element.

2. Claims 4-5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coles et al. in view of Batten et al. as applied to claim 3 above, and further in view of Yamada (U. S. Pat. 5,801,465).

Coles et al. and Batten et al. substantially teach the claimed invention except that it does not show that the lead wire side respective terminals being connected with connection portions, which extend in an axial direction from the stator side respective phase terminals. Neither Coles et al. nor Batten et al. disclose that the base is formed with insertion openings each in the shape of a tapered configuration expanding toward an open end thereof. Neither Coles et al. nor Batten et al. disclose that the respective phase lead wires and the multi-wire cable extend through a single grommet.

Yamada discloses that the lead wire side respective terminals (2,14) being connected with connection portions (5,15), which extend in an axial direction from the stator side respective phase terminals (4,16). Yamada discloses that the base (46) is formed with insertion openings 46a) each in the shape of a tapered configuration expanding toward an open end thereof. Yamada discloses that that the respective phase lead wires (14) and the multi-wire cable (4,42) extend through a single grommet (41,10). Yamada's invention has the purpose of facilitating the installation, transportation, and wiring assembly operations.

It would have been obvious at the time the invention was made to modify the motor disclosed by Coles et al. and Batten et al. and provide it with the terminal connection configuration disclosed by Yamada for the purpose of facilitating the installation, transportation, and wiring assembly operations.

3. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coles et al. in view of Batten et al. as applied to claim 1 above, and further in view of Hirose et al. (U. S. Pat. 5,793,132).

Coles et al. and Batten et al. substantially teach the claimed invention except that it does not show that the plurality of sensor signal wires are bundled together to form a multi-wire cable. Neither Coles et al. nor Batten et al. disclose that the respective sensor signal wires are combined with one another by a sealing material and covered on their outer periphery with a waterproof heat shrinkable tube at one end of the multi-wire cable which is connected with a connector.

Hirose et al. disclose that the plurality of sensor signal wires (32b) are bundled together to form a multi-wire cable (32). Hirose et al. disclose that the respective sensor signal wires (32b) are combined with one another by a sealing material and covered on their outer periphery with a waterproof heat shrinkable tube (32c) at one end of the multi-wire cable (32) which is connected with a connector. Hirose et al. disclose that that the respective phase lead wires (32) and the multi-wire cable (31) extend through a single grommet (43). The invention of Hirose et al. has the purpose of improving watertight capabilities and dust protection.

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It would have been obvious at the time the invention was made to modify the motor of Coles et al. and Batten et al. and provide it with the multi-wire configuration disclosed by Hirose et al. for the purpose of improving watertight capabilities and dust protection.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coles et al. in view of Batten et al. as applied to claim 2 above, and further in view of Chestnut et al. (U. S. Pat. 3,558,940).

Coles et al. and Batten et al. substantially teach the claimed invention except that it does not show that positional adjustment of the stator can be carried out even after assembling of the motor.

Chestnut et al. disclose that it does not show that positional adjustment of the stator can be carried out even after assembling of the motor (through mounting stud means 48). The invention of Chestnut et al. has the purpose of mounting the stator in position.

It would have been obvious at the time the invention was made to modify the motor of Coles et al. and Batten et al. and provide it with the mounting capabilities disclosed by Chestnut et al. for the purpose of mounting the stator in position.

Response to Arguments

Applicant's arguments filed June 14, 2002 have been fully considered but they are not persuasive.

In response to Applicant's remark that Coles et al. do not disclose a bracket it must be noted that Coles et al. has a bracket closing the open end of the housing (25).

In response to Applicant's argument that it would be necessary to make modifications to combine the references, it has been held that the test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art. *In re Bozek*, 163 USPQ 545 (CCPA 1969).

In response to Applicant's argument that the sensor in Batten is not near the housing, it must be noted from figure 1 that the sensor is mounted on the bracket 28, which is mounted on the housing. This configuration shows that the sensor is near the housing as claimed.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the sensor is provided to continuously detect the position of the rotor. The rotor in Coles et al. needs to have a position detection means since the rotor is what determines the direction and force in which the steering system will operate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
August 25, 2002



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